

Date: Wed, 28 Sep 94 04:30:28 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #288
To: Ham-Homebrew

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Today's Topics:

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

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We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 27 Sep 1994 09:34:33 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!
howland.reston.ans.net!math.ohio-state.edu!jussieu.fr!univ-lyon1.fr!
elendir@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <366ddd\$9q@cismsun.univ-lyon1.fr>,
<1994Sep26.123247.16457@ke4zv.atl.ga.us>, <368kkb\$a6q@proffa.cc.tut.fi>state.
Subject : Re: Interdigital filters

Kein{nen Paul (k23690@proffa.cc.tut.fi) wrote:

: A notch duplexer is propably the best solution if you must use a common
: antenna for both RX and TX _and_ you have a clean site. However, if there
: are strong FM and/or TV transmitters on the site to worry about, you still
: need some band-pass filtering between the duplexer and receiver with
: additional insertion loss.

The site is already almost covered with various antennae. In fact, it's the
highest place in the immediate vicinity of Paris. There are already two repeaters
here, VHF and UHF. That would complete both. But there are also a whole bunch of
professional repeaters.

: If you can install separate Rx and Tx antennas and move them as far as possible from each other and you can get away with much simpler filters.

Unfortunately, the antennae are installed atop a building, so I don't think there'll be much space...

As you suggest, I could use a notch filter to remove the Tx frequency. Let's assume an output power of 50 W, and a receiver sensitivity of 100 nV. That'd mean something like +17 dB output and -157 dB input, 160 dB of loss. Of course, I have no idea a priori about the spurious power on the Rx frequency. Could I insert another notch filter in the Tx path to remove any energy at the Rx QRG ?

: However, when using notch duplexers, there is allways the risk that
: strong out-of-band signals generate third order (and higher order)
: intermodulation products with our own Tx-signal that are stronger
: than the noise level at the Rx-frequency even if all signals are
: well below the 1 dB compression point of the preamp.

We have precisely the case here because our frequency is polluted by harmonics of a tracking system (SYLTRACK) every 15 kHz between 430 and 434 MHz, our phonic sub-band. Thus, each time we use the repeater, unless we have a very strong signal, we are covered by a horse like noise :-)

: I think Lance is refering to "Computer-aided Interdigital bandpass
: filter design" by Jerry Hinshaw, N6JH and Shahrokh Monemzadeh
: in Ham Radio Magazine, January 1985 pp. 12-26.

Thanks for your advices ! Do you know where I could possibly find the source ? It's really pretty hard to get Ham Radio Magazine over here, so imagine for old issues !!! :-)

Thanks again and 73s !

Vincent

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ENST, Ecole Nationale Supérieure des Telecommunications, Paris

End of Ham-Homebrew Digest V94 #288
